

IN THE CLAIMS

Claims 1-14 (Canceled)

15. (New) A radioactive substance decontamination method comprising the steps of:

decontaminating a first metal member contaminated with a radioactive substance by immersing the first metal member into as reducing decontamination agent in a first reducing decontamination tank managed with a first set radiation dose;

taking out the first metal member from the first reducing decontamination tank after the decontamination has finished;

when a dose of the reducing decontamination agent in the first reducing decontamination tank exceeds the first set radiation dose supplying the reducing decontamination agent in the first reducing decontamination tank to a second reducing decontamination tank managed with a second set radiation dose that is higher than the first set radiation dose, and reusing the reducing decontamination agent supplied into the second reducing decontamination tank to decontaminate a second metal member contaminated with radioactive substance in the second reducing decontamination tank; and

decomposing the reused reducing decontamination agent.

16. (New) A radioactive substance decontamination method according to claim 15, wherein a third metal member contaminated with radioactive substance is decontaminated in the first reducing decontamination tank while the second metal member is being decontaminated in the second reducing decontamination tank.

17. (New) A radioactive substance decontamination method according to claim 15, wherein a third metal member, having a dose that is lower than the second set radiation dose, is decontaminated in the first reducing decontamination tank.

18. (New) A radioactive substance decontamination method according to claim 15, wherein the second metal member decontaminated in the second reducing decontamination tank is further decontaminated in the first reducing decontamination tank.

19. (New) A radioactive substance decontamination method according to claim 18, wherein the second metal member is transferred into the first reducing decontamination tank after being immersed into an oxidizing decontamination tank.